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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,611	08/25/2003	Senis Busayapongchai	60027.0322US01/BS030093	2844

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EXAMINER	
SHAH, PARAS D	
ART UNIT	PAPER NUMBER
2609	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/647,611	BUSAYAPONGCHAI, SENIS	
	Examiner	Art Unit	
	Paras Shah	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The Office Action is in response to the Application filed on 8/25/2003.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The recitation of "digital format to an audio format" in claim 12, line 4 is not disclosed in the specification.

Claim Objections

3. Claim 2 is objected to because of the following informalities: "a first spoken alphabetic character input" in line 1 should be " the first spoken alphabetic character input". Appropriate correction is required.

4. Claim 10 is objected to because of the following informalities: " a telephone keypad" in line 2 should be "the telephone keypad". Appropriate correction is required.

5. Claim 12 is objected to because of the following informalities: "a digital format to an audio format" in line 3 should be "a audio format to a digital format". The specification shows the latter and does not indicate the former. The signal is digitized by the speech recognition engine. Appropriate correction is required.

6. Claim 13 is objected to because of the following informalities: "audio formatted" in line 3 should be "digitally formatted". Appropriate correction is required.

7. Claim 14 is objected to because of the following informalities: "audio formatted" in line 1 should be "digitally formatted". Appropriate correction is required.

8. Claim 15 is objected to because of the following informalities: "a DTMF key tone" in line 15 should be "the DTMF key tone". Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 1,15-17 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Brotman *et al.* (US 5,917,890 06/29/1999)

As to claims 1 and 23, Brotman *et al.* discloses a method for receiving a first spoken alphabetic character input from a user (see Figure 2, element 110); passing the first spoken alphabetic character input received from the user through a speech recognition engine (see Figure 1, element 940 and Col. 3, line 33-35) (e.g. It should be noted that it is inherent that the speech recognition as mentioned by the reference will recognize the utterance in order to understand the input, which will enable the same behavior as that by the applicant); at the speech recognition engine, recognizing the first spoken alphabetic character input (Col. 3, line 47-48) received from the user; querying the user for verification that the recognized alphabetic character input is the same (Col.

3, line 47-49) as the first spoken alphabetic character input (e.g. It should be noted that it is inherent that user verification is needed for the process of the next character input to continue as mentioned by the reference); if the recognized alphabetic character input is not the same as the first spoken alphabetic character input received from the user (see Col. 3, line 51-52), receiving from the user a dual tome multi-frequency (DTMF) key tone for each of one or more first spoken alphabetic characters received from the user (see Col 3, line 52-55); if one alphabetic character string associated with the DTMF key tones received from the user matches the first spoken alphabetic character input received from the user matches the first spoken alphabetic character input received from the user, designating the one alphabetic character string associated with the DTMF key tones (see Col. 3, line 54) received from the user that matches the first spoken alphabetic character input received from the user as a correct alphabetic character input (see Col. 3, lines 55-57).

As to claim 15, Brotman *et al.* discloses a method prior to receiving from the user a DTMF key tone for each of the one or more spoken characters input by the user: prompting the user for a DTMF key tone (see Col. 4, line 57) for each of the one or more spoken alphabetic characters input by the user (Col. 4, line 58); and querying the user to verify that the DTMF key tone received from the user are correct (see Col. 5, line 40 and lines 41-43).

As to claim 16, Brotman *et al.* discloses a method prior to receiving from the user a DTMF key tone for each of the one or more spoken characters input by the user as a correct alphabetic character input requested from the user: determining whether an

alphabetic character string associated with the DTMF tones (see Col. 5, lines 5-7) received from the user sounds like the first spoken alphabetic character input (see Col. 5, lines 20-23); and querying the user to determine whether the alphabetic character string associated with the DTMF key tones (see Col. 5, line 40 and lines 41-43) received from the user match the first spoken alphabetic character input received from the user.

As to claim 17, Brotman *et al.* discloses a method comprising: if more than one alphabetic character string is determined to be associated with the DTMF key tones (see Col. 5, lines 5-7) received from the user that sound like the first spoken alphabetic character input received from the user (see Col. 4, lines 14-15), receiving a second spoken input of the alphabetic character input from the user (see Col. 5, line 57); comparing the second spoken alphabetic character input received from the user to each of the more than one alphabetic character strings determined to be associated with the DTMF key tones (see Col. 5, lines 59-61) (e.g. The reference requests the user to repeat the utterance spoken to determine the actual word uttered. The process repeats where a DTMF signal is used to correctly identify the spoken word) received from the user that sounds like the first spoken alphabetic character input (see Col. 5, line 57) (e.g. re-utter is the same spoken alphabetic character used for comparison) received from the user; and if the second spoken alphabetic character input received from the user matches one of the more than one alphabetic character strings determined to be associated with the DTMF key tones received from the user (see Col. 5, line 59), designating the alphabetic character string associated with the DTMF key tones that matches the second spoken alphabetic input received from the user as a correct

alphabetic character (see Col. 5, line 60-62 and line 45 and Figure 3 elements 220, 260, 270, and 120).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 2-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brotman *et al.* as applied to claim 1 above in view of Hartley *et al.* (US 6,910,012).

As to claim 2, Brotman *et al.* does not specifically disclose the use a grammar definition defining a set of alphabetic characters acceptable to speech recognition engine. Hartley *et al.* discloses the use of grammars (see Col. 6, line 18) to define a set of alphabetic characters (see Col. 6, line 26) to the speech recognition engine. It would have been obvious to one of ordinary skilled in the art to have modified the speech recognition engine shown by Brotman *et al.* by a grammar as shown by Hartley *et al.*.

The motivation to combine the two references would be to increase the matching of the spoken utterance (see Col. 2, line 32-33) and limit the number of characters by the speech recognition system.

As to claims 3 and 4, Brotman *et al.* discloses a system that uses alphabetic (see abstract) letters for input by user (see Figure 2, element 110) in a speech recognition engine. (e.g. It should be noted that the reference does not specifically state the letters of the alphabet, the reference incorporates the English alphabet as input to the speech recognizer. It would be obvious to include the letters a-z in the alphabet).

As to claims 5-7, Hartley *et al.* discloses the inclusion of phonetic versions of alphabetic characters in the grammar (see Col. 2, lines 21-24). It should be noted that these letters are included along with the original alphabet (see Col. 6, lines 18-21).

As to claims 8-10, Brotman *et al.* discloses a method whereby the alphabetic character input received involves the use of DTMF key tones (see Col. 5, line 5), which include numbers (see Col. 5, line 6). It is inherent for a telephone keypad to include numbers 1-9.

As to claim 11, Hartley discloses a method for including a set of all alphabetic characters in a grammar (see Col. 6, line 18). However, Hartley *et al.* does not specifically disclose the use of DTMF key tones. Brotman discloses the use of DTMF key tones. This could be included in the grammar file to be recognized by the speech recognition unit. The motivation to include the DTMF signals in the grammar is for disambiguation (see Col. 3, line 53-54).

As to claim 12, Hartley *et al.* discloses a method converting the alphabetic character input from audio to digital format (Col. 6, line 60-61).

As to claim 12, Hartley *et al.* discloses a method converting the alphabetic character input from digital to audio format (Col. 5, line 44-50) (e.g. it should be noted that the digitized signal from the speech recognition engine is transformed into an analog signal for future voice recognition stages (voice applications).

As to claim 13, Brotman *et al.* discloses the verification of the character input is the same as that of the spoken character (see Figure 2, elements 140 and 150).

As to claim 14, Brotman *et al.* discloses the use of a telephone for the presentation of the recognized character (Col. 2, line 33 and Col. 3, line 6-8) (e.g. It is inherent that a telephone includes such signals as voice and DTMF key signal. Further, the reference uses the telephone as the communication mode).

14. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brotman *et al.* in view of Hartley *et al.*

As to claim 18, Brotman *et al.* discloses a system for alphabetic speech recognition comprising: receiving a DTMF key tone from a user (see Col. 5, line 5-7); determining one or more alphabetic character combinations that are represented by the DTMF key tone input (see Col. 5, lines 5-28) (e.g. It is shown in the reference the method of determining the character set corresponding to the DTMF key pressed. Also, the order of the steps presented by the applicant where the first spoken input is received first or the DTMF key tone is received first will not make a difference to the recognition of the uttered word); receiving a spoken alphabetic character input from the

user (Col. 5, line 10-14); passing the spoken character from the user to a speech recognition engine (see Figure 1, element 940 and Col. 3, line 33-35); matching the spoken input to that of the DTMF key tones and then designating the alphabetic character as the correct alphabetic character (Col. 5, lines 24-33) (e.g. It is shown in the reference that the DTMF signal is matched to that of the stored signal representing spoken character. Once one has been eliminated the next stored signal is compared). However, Brotman *et al.* does not specifically disclose the use of an audio to digital conversion. Hartley *et al.* does disclose an audio to digital converter (Col. 6, line 60-61). It would have been obvious to one of ordinary skilled in the art to have included the audio to digital converter when presenting the signal to a speech recognition device. The motivation to modify the speech recognition system by Brotman *et al.* by the digitizer shown by Hartley *et al.* is for analysis by a speech recognition system (Col. 1, line 26).

As to claim 19, Brotman *et al.* discloses the use of phonetic versions of characters (Col. 5, lines 11-13) (e.g. It should be noted that the reference uses the phonetic versions when choosing the correct character from the DTMF signal. Further, the use of phonetic versions of DTMF signals could be used if they are loaded in a grammar file as said by the applicant. Hartley *et al.* discloses a grammar file that is used for having a preset character set for the speech recognition engine. A similar grammar file can be used for the phonetic variants of the DTMF signal).

15. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brotman *et al.* in view of Hartley *et al.*

As to claim 20, Brotman *et al.* discloses a system for alphabetic speech recognition comprising: a speech recognition engine (see Figure 1, element 940 and Col. 3, line 33-35) (e.g. It should be noted that it is inherent that the speech recognition as mentioned by the reference will recognize the utterance in order to understand the input, which will enable the same behavior as that by the applicant); receive a first spoken alphabetic character from a user (see Figure 2, element 110); query the user for verification that the recognized alphabetic character input is same as the spoken alphabetic character (Col. 3, line 47-49); receive from the user a DTMF key tone for each spoken alphabetic character input from user if recognized character is not the same (see Col. 4, lines 52-55 and Col. 5, lines 5-28); designating an alphabetic character associated with the DTMF key tone that matches the alphabetic character input from user (Col. 5, lines 24-33) (e.g. It is shown in the reference that the DTMF signal is matched to that of the stored signal representing spoken character. Once one has been eliminated the next stored signal is compared). However, Brotman *et al.* does not specifically disclose the conversion of the character input from audio to digital format. Hartley *et al.* does disclose a method of digitizing the spoken utterance for input into the speech recognition engine (Col. 6, line 60-61). It would have been obvious to one of ordinary skilled in the art to have included the audio to digital converter when presenting the signal to a speech recognition device. The motivation to modify the speech recognition system by Brotman *et al.* by the digitizer shown by Hartley *et al.* is for analysis by speech recognition system (Col. 1, line 26).

As to claims 21 and 22, Brotman *et al.* discloses the determination of an alphabetic character string associated with the DTMF key tones sounds like the first spoken alphabetic character (Col. 5, lines 24-33) (e.g. It is shown in the reference that the DTMF signal is matched to that of the stored signal representing spoken character); querying the user to determine if the alphabetic character associated with the DTMF key tone matches the first spoken alphabetic character received from the user (see Figure 2, elements 230 and 240 and Col. 5, lines 34-39). A second spoken character is done in the reference to select the correct letter (see Col. 5, lines 57-62).

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The US 5,638,425, US PG Pub 2002/0143548 and 2003/0191648 shows the use of both a DTMF signal and a spoken utterance. The US 6,629,071 shows the input of an alphanumeric sequence as well as both DTMF and spoken utterance inputs. The Lumenvox Speech Recognition System shows the use of a grammar within speech recognition engine. The NPL by Adams *et al.*, Brens *et al.*, and Melin *et al.* shows an application to the use of human interaction with a telephone system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paras Shah whose telephone number is (571)270-1650. The examiner can normally be reached on MON.-FRI. 7:30a.m.-5:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xiao Wu can be reached on (571)272-7761. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

P.S.

1/5/2007

XIAO WU
SUPERVISORY PATENT EXAMINER